

Part - IISection - 1Question No-2

(a)

Star =Planets

- | | | |
|------|---|---|
| i- | stars emits their own light | Reflects light from star. |
| ii- | Bigger in size | Smaller in size as compared to stars |
| iii- | Parts of the larger universe | Parts of the solar system |
| iv- | stars appearance from earth, they twinkle | While planet's appearance is different that of stars. |

The life cycle of stars and planets from a nebula to black hole also differs.

The origin of stars is from the big bang and stars have a longer life while planets born later when sun bursted into gases. In short, planets life cycle revolves around nebula while stars after they die in the form of black hole.

(b)

Semiconductors

Semiconductors are small chips of silicon and lithium. These are good conductors of heat and electricity. Mostly used in computer devices.

Types of Semi-conductors.

N-type Semiconductors:

N-type semi-conductors are made up of pure silicon or germanium. It has excess of electrons, making them the majority charge carriers.

P-type Semiconductors:

It is created by doping silicon to the boron, aluminium, etc. These are positive charge carriers.

Applications of Semiconductors

- 1) Semiconductors are used in microprocessors of computers.
- 2) Mobile phones, and small electronic

devices like transistors, capacitors, etc. in all semi-conductors used.

- 3) In rockets, fighter jets and in everything, semiconductors are used.

(C)

Global Warming:-

Global warming is a process which rise temperature of the globe, that's why called global warming. In other words, ~~the rising of~~ the process of rising temperature of the globe is called global warming.

Mechanism of Global Warming

Different gases and other man made activities contribute in global warming. Deforestation is one way of increasing global warming. The gases which especially CO_2 rise in the atmosphere and increase temperature, this rise the temperature. These gases which cause the rising temperature are called greenhouse gas. Mostly, industries, vehicles and space

rockets emit green house gases.

Three major green house gases-

- 1) CO_2 carbon dioxide
- 2) SO_2 sulphur oxide
- 3) NO_2 Nitric oxide

(d)

Tsunami

Tsunami is a Japanese word which mean to harbour the waves. This when sudden whirl of waves arise especially in costal areas and in oceans this called Tsunami.

Process of Tsunami

Tsunami is sometimes caused by earthquakes. The magnitude of the earthquake must be above 7.0 on Richter scale. Sometimes, it also arises due to moon gravity and wind vacuums. For example, when winds blows in oceans and inside centre pressure create a vacuum and a long whirl

potential Tsunami.

Impacts of Tsunamis on coastal areas.

- 1) Rip off buildings and electricity towers.
- 2) Loss of human lives due to Tsunami
- 3) Crops and livestock get damaged due to Tsunami
- 4) Infrastructure damage due to effects of Tsunami



Question No.3

(a)

Mitochondria and Ribosomes

These are present in animal cell, which perform various functions. Mitochondria makes protein and provide energy to the cell. It is very important. Ribosomes also carry hereditary traits the characteristics which are to be transferred to foetus is carried out by Ribosomes.

Mitochondria is called power house of the cell because it provide energy to the cell. The protein formation took place in the mitochondria - that's why it is called as the power house of the cell.

(C)

Renewable Energy	Non-Renewable Energy
(i) The energy which can be re-used e.g solar and wind energies	The energy which once used cannot be reused. e.g, natural gas, Fossil fuels etc.
(ii) Less cost	more cost of Non-Renewable energy.
(iii) Climate friendly	climate killer - i.e cause of climate change.

Wind Energy as a source of sustainable future.

Wind energy has a great potential of providing the global needs in future. Mostly, coastal areas all over

the world has a great potential of creating electricity. It is free once installed. In Pakistan, wind energy can also have a future. The growing energy needs of the world and increasing climate change compel the world to go for renewable energy like wind energy.

(d)

Dengue Fever:

It is a type of strong fever which is caused by virus D-1, D-2 and D-3.

Symptoms:

- High fever
- Headache
- Sweating
- Fatigue etc.

Transmission:

It is transmitted through a female mosquito called Aedes Aegypti.

Preventive measures.

- 1) Filling marshy places because virus originates from there.
- 2) Mosquito nets, the best way to prevent dengue or any other fever like malaria.
- 3) Spray to kill mosquitoes.
- 4) Treatment on time.

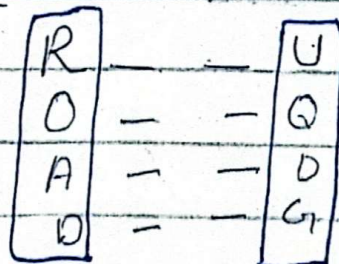
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(a)

Solution-

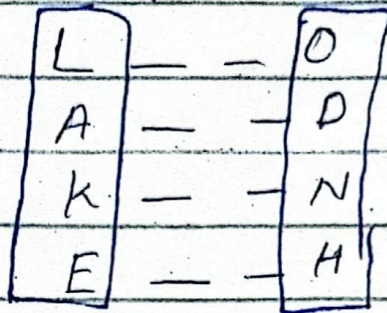
ROAD is coded as UQDG

Here the rule in the code is
third one of the given letter.

Explanation

ROAD → UQDG

Now "LAKE" will be coded
as



LAKE $\rightarrow$ ODNH

Thus LAKE is coded ODNH,
according to given language.

(B)

Answer

The woman is the wife
of nephew of the man.

(C)

(i) 4, 12, 6, 18, 9, 27, —

Explanation

4, 12, 6, 18, 9, 27, —

There are two Patterns

i) 4, 6, 9, _____?

ii) 12, 18, 27 - complete

Pattern one's sequence is

$$4 + 2 = 6$$

$$6 + 3 = 9$$

$$9 + 4 = \underline{12}$$

So, According to this pattern next number in the sequence will be "12"

i.e 4, 12, 18, 9, 27, 12

Answer

ii) 1, 2, 6, 24, 120, _____.

Solution 1, 2, 6, 24, 120, _____

Explanation

$$1 \times 1 = 1$$

$$1 \times 2 = 2$$

$$2 \times 3 = 6$$

$$6 \times 4 = 24$$

$$24 \times 5 = 120$$

$$120 \times 6 = 720$$

So, The sequence will be

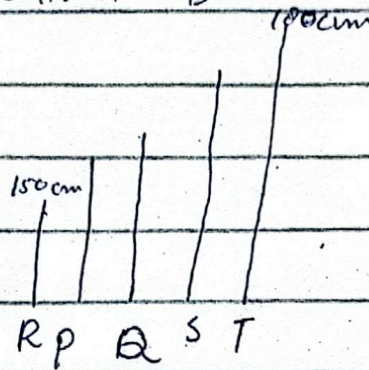
1, 2, 6, 24, 120, 720.

Answer

(d)

Solution.

According to Given Data.



The shortest person is = 150 cm

The Tallest is = 180 cm

So,

• Q is the third ~~for~~ Tallest friend.

$$\begin{aligned}
 \text{Range} &= \text{Maximum value} - \text{Minimum value} \\
 &= 180 - 150 \\
 &= 30 \text{ cm}
 \end{aligned}$$

Ans

Question No-6

(a)

Solution.

Pipe "A" fills water tank = 10 h

Pipe "B" fills = = = 15 h

Pipe "C" empty tank in = 30h.

So,

Calculate hours to fill tank

if all pipes simultaneously opened.

Thus let us take

Pipe "A" fills tank in 30h = 3 times = $3 \times 10h$

Pipe "B" fills tank in 30h = 2 times = $2 \times 15h$

Pipe "C" empty tank in 30h = 1 time

Now

Tank will be filled in = $\frac{30h}{5} = 6 \text{ hours}$

Answer

(b)

Solution:

$$X:Y:Z = 4:5:7$$

So, let us take total salary of

$$X, Y \text{ and } Z = T$$

Then

10% increase in Y's salary.

equation becomes,

$$\frac{5}{16} \times 10 + T = Y \rightarrow (i)$$

and

$$T - \frac{7}{16} \times 25 = Z \rightarrow (ii)$$

Also, it is given that new salary of Y and Z = Rs. 169,500

Thus

$$\text{Salary of Y} + \text{Salary of Z} = 169,500$$

We know that

$$\frac{5}{16} \times 10 + T + T - \frac{7}{16} \times 25 = 169,500$$

$$\frac{25}{8} + 2T - \frac{175}{16} = 169,500$$

$$2T + \frac{25}{8} - \frac{175}{16} = 169,500$$

$$2T + \frac{50 - 175}{16} = 169,500$$

$$2T - \frac{125}{16} = 169,500$$

$$2T = 169,500 + \frac{125}{16}$$

$$2T = \frac{9712000 + 125}{16}$$

$$2T = \frac{2712125}{16}$$

$$T = \frac{2712125}{32}$$

$$T = 84753.7 \quad \text{--- (iii)}$$

put. it into eq (ii)

$$\frac{5}{16} \times 10 + 84753.7 = Y$$

$$\frac{25}{8} + 84753.7 = Y$$

$$\boxed{Rs\ 84756.9 = Y}$$

Also.

$$84753.7 - \frac{7}{16} \times 25 = Z$$

$$84753.7 - 10.9 = Z$$

$$\boxed{84742.8 = Z}$$

Now original salary of "X"

$$\frac{4}{16} T = X$$

$$\frac{4}{16} (84753.7) = X$$

$$\boxed{Rs\ 21188 = X}$$

Original Salary of "X"

Answer.

(15)

(d)

Solution:

Let class's total number of students is $= x$

We also know that

$$\text{Average} = \frac{\text{Sum of Numbers}}{\text{Total Numbers}}$$

Now, According to given data

$$78 = \frac{\text{Sum of No}}{x} \rightarrow (i)$$

Also,

$$75 = \frac{\text{Sum of No}}{x-5} \rightarrow (ii)$$

According Maths rule we can arrange this equation -

$$78(x) = \text{Sum of No}$$

$$75(x-5) = \text{Sum of No}$$

We can compare now, as equation is equal. So,

$$78(x) = 75(x-5)$$

$$78x = 75x - 375$$

$$78x - 75x = +375$$

$$\frac{3x}{3} = \frac{+375}{3}$$

$$\boxed{x = 125} \quad \text{Answer}$$